Evaluation of Salt Tolerance of Garden Roses

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BACKGROUND

Roses are the most economically important ornamental plant in the world and have been cultivated for more than two thousand years. Roses are traditionally categorized as salt sensitive. However, our recent research has revealed that some cultivars may be more tolerant than others. As fresh water supplies become limited, reclaimed water is increasingly being used for irrigating landscapes and agricultural and horticultural crops. Information on how garden roses respond to lower quality irrigation water is important. The goal of this project is to identify the salt tolerant rose cultivars that can be grown in salt affected areas and/or irrigated with reclaimed water.

OBJECTIVES

- Evaluate the salt tolerance of selected garden rose cultivars that are potentially heat and drought tolerant for southern regions.
- Evaluate salt tolerance of the Earth-Kind roses. Earth-Kind is a special designation given to selected rose cultivars by the Texas AgriLife Extension Service through the Earth-Kind landscaping program. It is based on the results of extensive research and field trials and is awarded only to those roses demonstrating superior pest tolerance, combined with outstanding landscape performance.

Screening salt tolerance for various rose cultivars in the greenhouse

RESULTS AND BENEFITS

- A wide range of salt tolerance among 13 garden rose cultivars was found in the preliminary experiments. Moderately tolerant cultivars can be irrigated with saline solution at electrical conductivity up to 4.0 dS/m, 2-3 times higher than that of reclaimed water, without visual salt damage. Future research will confirm these results and continue to determine the salt tolerance of more rose cultivars.
- The identified salt tolerant rose cultivars will help beautifying landscapes with more colors while conserving high quality water. The threshold of salinity levels of roses, which cause plant injury, will provide guidance to irrigation management with reclaimed water in urban landscapes and nursery industry.
- The research results will help home owners and urban landscape professionals select salt tolerant roses to improve landscape performance for areas where lower quality water may be used for irrigation.

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